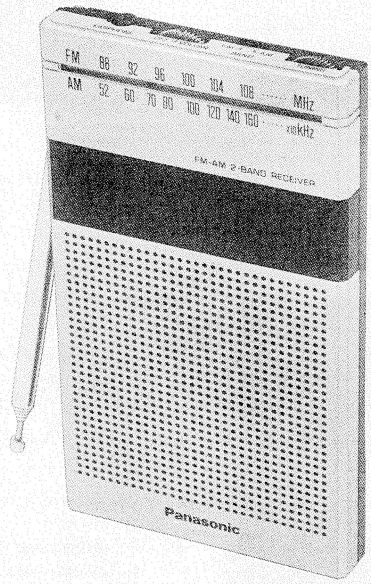
ORDER NO. RD 7908-5045C

Service Manual

Radio

RF-032



■ SPECIFICATIONS

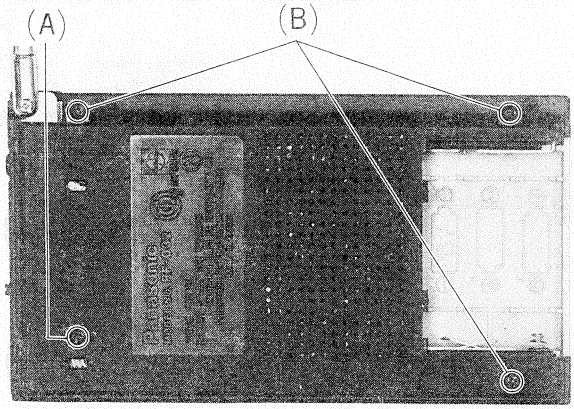
Frequency Range:	FM 87.5 ~ 108 MHz AM 520 ~ 1,610kHz (577 ~ 186m)
Instermediate Frequeney:	FM 10.7MHz AM 455kHz
Sensitvity:	FM 3μV for 50mW Output AM 160μV/m for 50mW Output
Batteries:	4.5V (Three "AAA" size Penlight Batteries)
Speaker:	4.5cm ($1^1/_2$") PM Dynamic speaker
Dimensions:	72 (Wide) x 127 (High) x 15.7 (Deep) mm ($2^7/_8$" x 5" x $^5/_8$")
Weight:	143g (5.05 oz) with batteries
Impedance:	Speaker. . . . . 8Ω Earphone Jack 8Ω

Specifications are subject to change without notice.

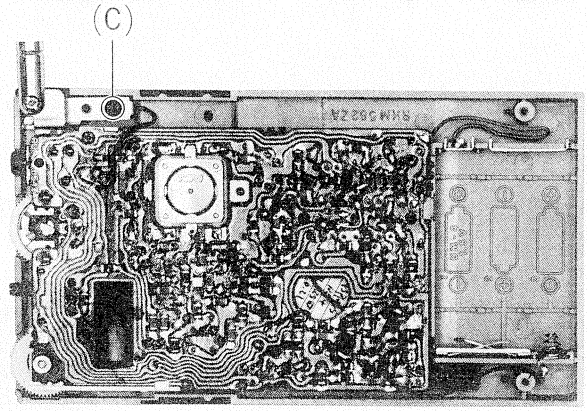
Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

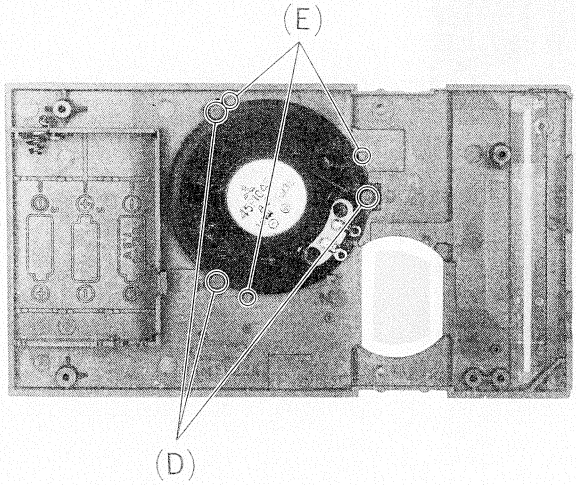
DISASSEMBLY INSTRUCTIONS



[Fig. 1]



[Fig. 2]



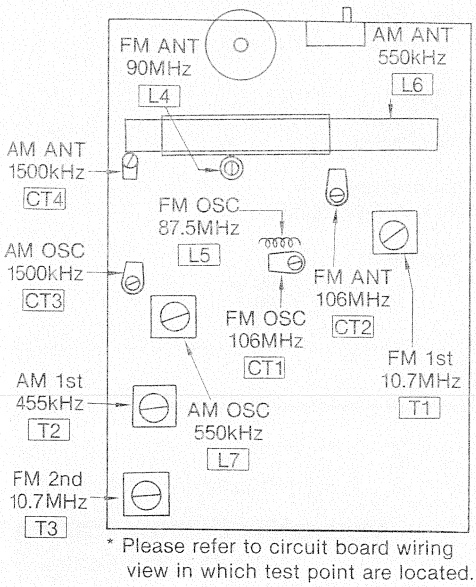
[Fig. 3]

Procedure	To Remove —.	Remove —.	Shown in Fig. —.
1	Rear Cover Ass'y *1	Screw(2 x 10) . . . . (A) x 1	1
2		Screw(2 x 6) . . . . . (B) x 3	1
3	Chassis	Screw(2 x 6) . . . . . (C) x 1	2
4	Speaker *2	Melted rib . . . . . (D) x 3	3
5		Rib . . . . . (E) x 3	3

*1. To remove 2 screws, the whip antenna should be moved as shown in fig. 1.

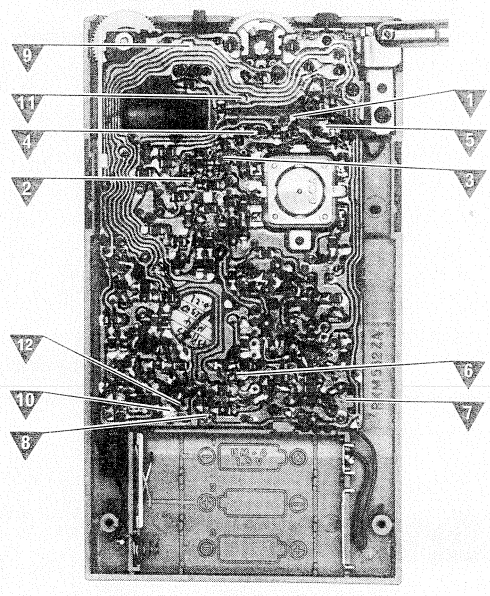
*2. To replace with new speaker, be sure to make following procedure.
1. Cut the part (D).
2. Remove the defectiue speaker.
3. Install the new speaker.
4. To fix it, melt the part (E).

■ ALIGNMENT POINTS



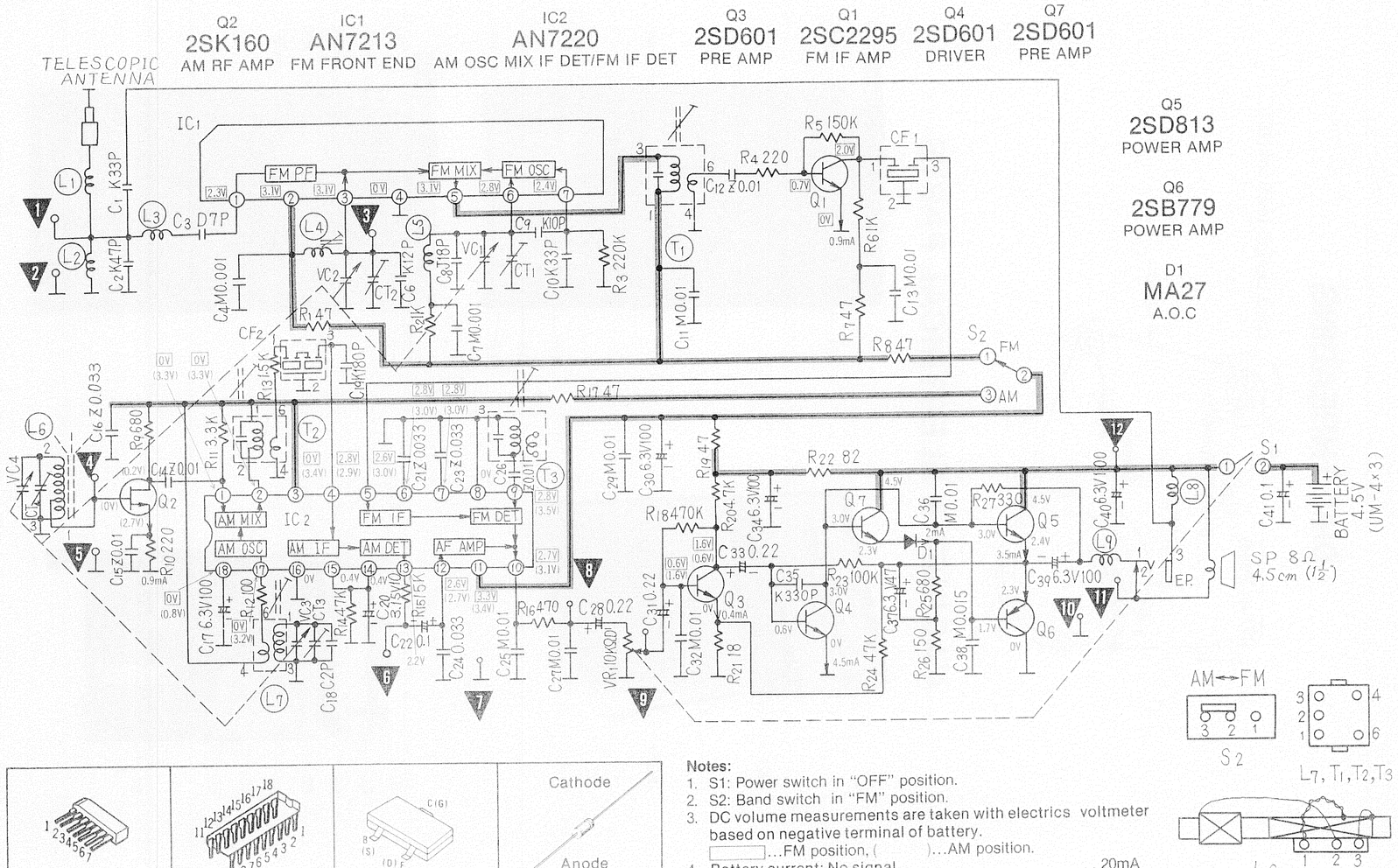
* Please refer to circuit board wiring view in which test point are located.

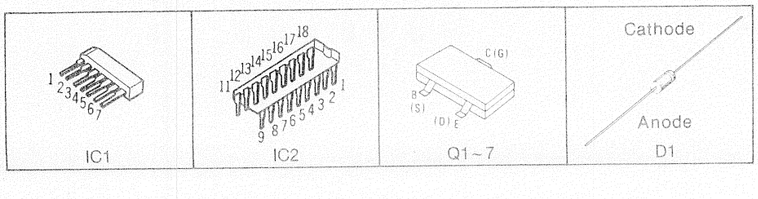
[Fig. 4]



[Fig. 5]

SCHEMATIC DIAGRAM — MODEL RF-032

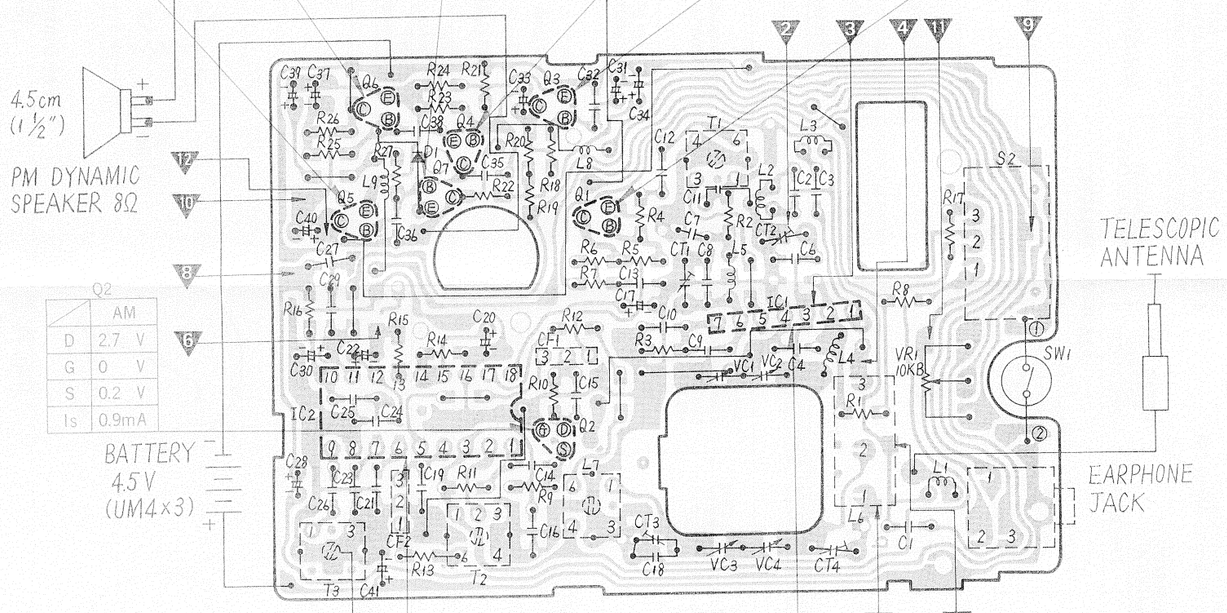




Notes:

1. S1: Power switch in "OFF" position.
2. S2: Band switch in "FM" position.
3. DC volume measurements are taken with electrics voltmeter based on negative terminal of battery.
   [ ]...FM position, ( )...AM position.
4. Battery current: No signal 20mA
   Maximum output 110mA

CIRCUIT BOARD WIRING VIEW — MODEL RF-032



Q5

C	4.5 V
B	3.0 V
E	2.4 V
IE	— mA

Q6

C	0 V
B	1.7 V
E	2.3 V
IE	3.5mA

Q7

C	4.5 V
B	3.0 V
E	2.3 V
IE	2 mA

Q4

C	3.0 V
B	0.6 V
E	0 V
IE	4.5mA

Q3

	FM	AM
C	1.6 V	0.6 V
B	0.6 V	1.6 V
E	0 V	0 V
IE	0.4mA	0.4mA

Q1

	FM
C	2.0 V
B	0.7 V
E	0 V
IE	0.9mA

Q2

	AM
D	2.7 V
G	0 V
S	0.2 V
Is	0.9mA

IC2

	1	2	3	4	5	6	7	8	9
FM	0V	0V	0V	2.8V	2.6V	2.8V	2.8V	0V	2.8V
AM	3.3V	3.3V	3.4V	2.9V	3.0V	3.0V	3.0V	0V	3.5V
	10	11	12	13	14	15	16	17	18
FM	2.7V	3.3V	2.6V	2.2V	0.4V	0.4V	0V	0V	0V
AM	3.1V	3.4V	2.7V	2.2V	0.4V	0.4V	0V	3.2V	0.8V

IC1

	1	2	3	4	5	6	7
FM	2.3V	3.1V	3.1V	0V	3.1V	2.8V	2.4V

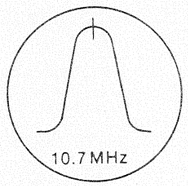
ALIGNMENTS

■ ALIGNMENT INSTRUCTION

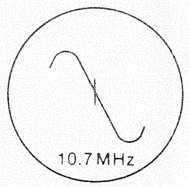
READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Notes:
1. Set volume control to maximum.
2. Set band selector switch to AM or FM.
3. Set power source voltage to 4.5 volts DC.
4. Output of signal generator should be no higher than necessary to obtain an output reading.

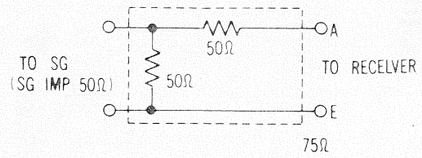
	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING [DISTANCE]	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
	AM-IF ALIGNMENT					
(1)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. with 400 Hz.	Point of non-interference. (on/about 600 kHz)	Output meter across voice coil.	T_2 (1st IFT)	Adjust for maximum output.
	AM-RF ALIGNMENT					
(2)	〃	550 kHz	550 kHz [3.7mm ($^5/_{32}$″)]	〃	L_7(OSC Coil) (＊1) L_6(ANT Coil)	Adjust for maximum output. Adjust L_6 by moving coil bobbin along ferrite core.
(3)	〃	1500 kHz	1500 kHz [33.7mm ($1^5/_{16}$″)]	〃	CT_3 (OSC Trimmer) CT_4 (ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
	(＊1) Cement antenna bobbin with wax after completing alignment.					
	FM-IF ALIGNMENT					
(4)	Connect to point 3 Negative side to E.	10.7 MHz (400 kHz SWP.)	Point of non-interference. (on/about 90 MHz).	Connect vert. amp. of scope to point 8. Negatives side to E	T_1 (FM 1st IFT) (Primary)	Adjust for maximum amplitude. (Refer to Fig. 6).
(5)	〃	〃	〃	〃	T_3 FM 1st IFT) (Secondary)	Adjust for maximum amplitude. (Refer to Fig. 7).
	FM-RF ALIGNMENT					
(6)	Connect to point 1 Negative side to E. (Refer to Fig. 8).	87.5 MHz	Tuning capacitor fully closed.	Output meter across voice coil.	L_5 (OSC Coil)	(＊2) Adjust for maximum output.
(7)	〃	90 MHz	Tune to signal.	〃	L_4 (ANT Coil)	〃
(8)	〃	106 MHz	106 MHz [31.5mm ($1^1/_4$″)]	〃	CT_1 (OSC Trimmer) CT_2 (ANT Trimmer)	(＊2) Adjust for maximum output. Repeat stops (6)～(8).
	(＊2) Three output responses will be present; proper tuning is the center frequency.					



[Fig. 6]

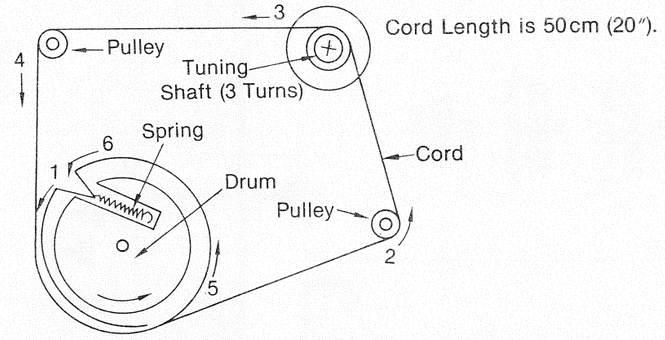


[Fig. 7]

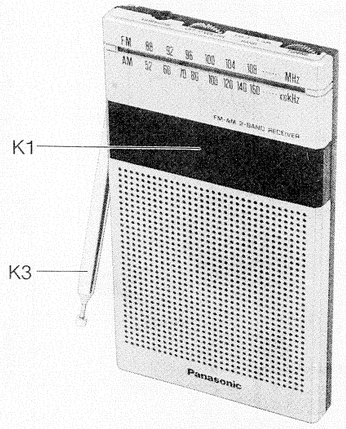


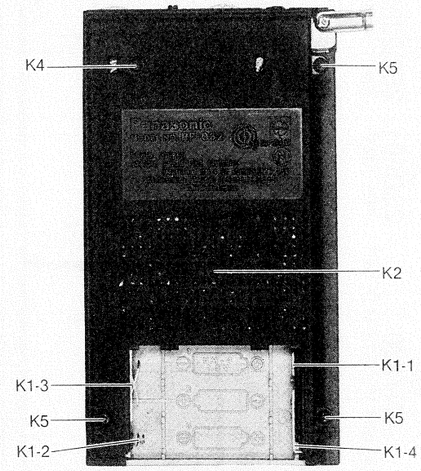
FM Dummy Antenna
[Fig. 8]

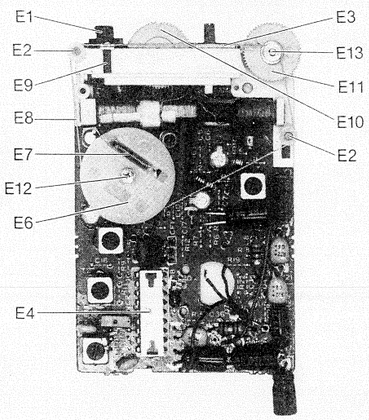
DIAL THREADING

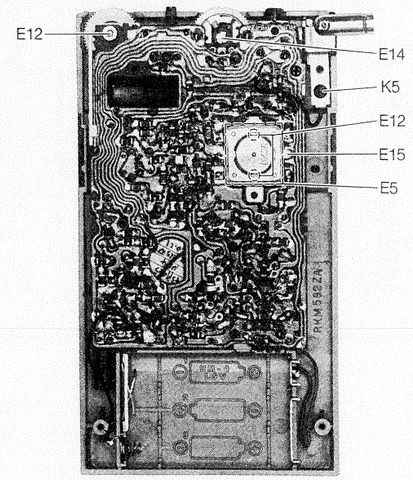


CABINET & ELECTRICAL PARTS









■ REPLACEMENT PARTS LIST . . . . . Model RF-032

(RD7908-5045C)

NOTES: 1. ⚠ indicates that only parts specified by the manufacturer be used for safety.
2. The S mark is service standard parts and may differ from production parts.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
		INTEGRATED CIRCUIT, TRANSISTORS AND DIODES		
IC1	AN7213	IC	1	
IC2	AN7220	IC	1	
Q1	2SC2295	Transistor (Si)	1	
Q2	2SK160	"	1	
Q3,4,7	2SD601	"	3	
Q5	2SD813	"	1	
Q6	2SB779	"	1	
D1	MA27B2	Diode (Ge)	1	
		COILS AND TRANSFORMERS		
L4	RLO4N106	Detector Coil, FM	1	
L5	RLO4Y16	Oscillator Coil, FM	1	
L6	RLF2Y8	Antenna Coil, AM	1	
L7	RLO2A4	Oscillator Coil, AM	1	
L8	RLQW1001	Choke Coil	1	
L9	RLQW22G1	"	1	
T1	RLI4A8	IFT, FM 1st	1	
T2	RLI2A10	IFT, AM	1	
T3	RLI4A9	IFT, FM 2nd	1	
		VARIABLE RESISTOR		
VR1	EVLEABT12D14	Variable Resistor 10 kΩ (D)	1	
		VARIABLE CAPACITORS		
VC1,2,3,4	RCV4LC31-S	Tuning Capacitor	1	
CT1,2,3	RCVMCX1-10S	Trimmer Capacitor	3	
CT4	ECV1ZW10X53N	"	1	
		CERAMIC FILTERS		
CF1	RVFCF10S12FZ	Ceramic Filter	1	
CF2	RVFCFM2455B	"		
		SPEAKER		
SP	EAS45P104S	Speaker, 4.5cm (1-1/2"), 8 Ω	1	
		SWITCH		
S1	RSS2A23Z	Switch, Band	1	
		RESISTORS (Value is in OHMS)		
R1,7,8,17,19	RRD18XK470	47 1/8W Chip	5	
R2,6	RRD18XK102	1 K " "	2	
R3	RRD18XK224	220 K " "	1	
R4,10	RRD18XK221	220 1/8W Chip	2	
R5	RRD18XK154	150 K " "	1	
R9,25	RRD18XK681	680 " "	2	
R11	RRD18XK332	3.3 K " "	1	
R12	RRD18XK101	100 " "	1	
R13	RRD18XK152	1.5 K " "	1	
R14,24	RRD18XK473	47 K " "	2	
R15	RRD18XK153	15 K " "	1	
R16	RRD18XK471	470 " "	1	
R18	RRD18XK474	470 K " "	1	
R20	RRD18XK472	4.7 K " "	1	
R21	RRD18XK180	18 " "	1	
R22	RRD18XK820	82 " "	1	
R23	RRD18XK104	100 K " "	1	
R26	RRD18XK151	150 " "	1	
R27	RRD18XK331	330 " "	1	
		CAPACITORS (Value is in MICRO FARADS except P.P=PICO FARADS)		
C1,10	ECUX1H330KC	33 P 50V Chip	2	
C2	ECUX1H470KC	47 P " "	1	
C3	ECUX1H070DC	7 P " "	1	
C4,13,25,27,29,32,36	ECUX1H103MD	0.01 " "	7	
C7	ECUX1H102MD	0.001 " "	1	
C8	ECUX1H180JC	18 P " "	1	
C9	ECUX1H100KC	10 P " "	1	
C11	ECFVD103MD	0.01 25V Semi-Conductor	1	
C12,14,15,26	ECUX1H103ZF	0.01 50V Chip	4	
C16,21,23,24	ECUX1H333ZF	0.033 " "	4	
C17,30,34,39,40	ECEA1AS101	100 10V Electrolytic	5	S
C18	ECUX1H020CC	2 P 50V Chip	1	
C19	ECUX1H181K	180 P " "	1	
C20	ECSF0F106	10 3.15V Electrolytic	1	S
C22	ECAG16ER1	0.1 16V "	1	S
C28,31,33,41	ECAG16ER22	0.22 " "	4	S
C35	ECUX1H331K	330 P 50V Chip	1	
C37	ECEA1AS470	47 10V Electrolytic	1	S
C38	ECUX1H153MD	0.015 50V Chip	1	
C6	ECUX1H120KC	12 P " "	1	
		CABINET PARTS		
K1	RYMF032XG8	Front Cabinet Ass'y	1	
K1-1	RJC909Z	Terminal, Battery + Side	1	
K1-2	RJC911Z	Spring, Battery - Side	1	
K1-3	RJC901Z	Terminal, Battery +,- Side	1	
K1-4	RJC908Z	Terminal, Battery +,- Side	1	
K2	RKF474Z	Rear Cabinet	1	
	RKK178Z	Battery Cover	1	
K3	XEARK98FAY	Telescopic Antenna 6 Steps, 475mm	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
K4	XTB2+10CFZ	Screw	1	
K5	XTB2+6CFZ	Screw	4	
		ELECTRICAL PARTS		
E1	RJJ1C1Z	Jack, Ep	1	
E2	RZAF032XG	Dial Chassis Ass'y	1	
E3	RUV560Z	Cover, Switch	1	
E4	RMC506Z	Shield Plate (IC2)	1	
E5	RMV68Z	Cover, Variable Capacitor	1	
E6	RDD241Z	Drum Dial	1	
E7	RDS2052Z	Spring, Drum	1	
E8	RDZ03Y	Cord, Dial (50cm)	1	
E9	RDP210Z	Pointer, Dial	1	
E10	RBT132Z	Knob, Volume	1	
E11	RBT133Z	Knob, Tuning	1	
E12	XSHR17+2FZ	Screw	3	
E13	XTNR2+6CFZ	Screw	1	
E14	XNG2EBW	Screw	1	S
E15	XSN17+2FZ	Screw	2	
		ACCESSORIES		
	XEH1A2-D	Earphone	1	S
	RQD143Z	Case	1	
		PACKING MATERIALS		
	RPK9283Z	Gift Box, Complete	1	
	XZB10X15A04	Polyethylene Cover	1	
		PRINTED MATERIAL		
	RQX6482Z	Instruction Book	1	

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